

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 26 SEP 2005

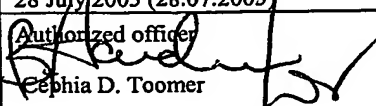
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Applicant's or agent's file reference	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. PCT/US04/29380	International filing date (day/month/year) 10 September 2004 (10.09.2004)	Priority date (day/month/year) 12 September 2003 (12.09.2003)	
International Patent Classification (IPC) or national classification and IPC IPC(7): F17D 1/05; C09K 3/00 and US Cl.: 44/301; 585/15, 950; 507/90; 252/189,190			
Applicant CAPTUR TECHNOLOGIES CO., L.L.C.			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 2 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☐ (sent to the applicant and to the International Bureau) a total of      sheets, as follows:
    - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s))     , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

Date of submission of the demand 11 April 2005 (11.04.2005)	Date of completion of this report 28 July 2005 (28.07.2005)
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer  Cephia D. Toomer Telephone No. 571-272-1700

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US04/29380

**Box No. I Basis of the report**

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))  
☐ publication of the international application (under Rule 12.4)  
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ the international application as originally filed/furnished

☒ the description:

pages 1-7 \_\_\_\_\_ as originally filed/furnished  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the claims:

pages 8-10 \_\_\_\_\_ as originally filed/furnished  
pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ the drawings:

pages \_\_\_\_\_ as originally filed/furnished  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_  
pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_  
☐ the claims, Nos. \_\_\_\_\_  
☐ the drawings, sheets/figs \_\_\_\_\_  
☐ the sequence listing (*specify*): \_\_\_\_\_  
☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_  
☐ the claims, Nos. \_\_\_\_\_  
☐ the drawings, sheets/figs \_\_\_\_\_  
☐ the sequence listing (*specify*): \_\_\_\_\_  
☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US04/29380**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims <u>4-9, 13-20, 22-23, 25-26 and 28</u>	YES
	Claims <u>1-3, 10-12, 21, 24, 27 and 29-32</u>	NO
Inventive Step (IS)	Claims <u>4-9, 13-20, 22-23, 25-26 and 28</u>	YES
	Claims <u>1-3, 10-12, 21, 24, 27 and 29-32</u>	NO
Industrial Applicability (IA)	Claims <u>1-32</u>	YES
	Claims <u>NONE</u>	NO

## 2. Citations and Explanations (Rule 70.7)

Claims 1, 2, 10-12, 21, 24, 27 and 29-32 lack novelty under PCT Article 33(2) as being anticipated by Sloan (US 5,420,370).

Sloan teaches a method for controlling clathrate hydrates in fluid systems comprising gas, oil and water (see abstract; col. 3, lines 36-46; col. 5, lines 1-38 and 50-60). The method comprises adding a polymeric additive to the fluid systems and the additive may be poly(N-vinyl-2-pyrrolidone) and/or hydroxyethylcellulose (solid particle). The additive has a molecular weight of greater than 3000 (see col. 4, lines 50-64).

Accordingly, Sloan teaching all the limitations of the claims anticipates the claims.

Claims 1, 2, 10 and 31 lack novelty under PCT Article 33(2) as being anticipated by Sloan (US 5,639,925).

Sloan teaches a method for preventing hydrate masses in fluid systems such as natural gas and petroleum. The additives used to prevent the formation of the hydrates are polymeric and include such compounds as polyamides and poly-oxazolines (see abstract; col. 3, lines 20-37, 51-67; col. 4, lines 14-20, 23-41).

Accordingly, Sloan teaching all the limitations of the claims anticipates the claims.

Claims 1-3, 10 and 31 lack novelty under PCT Article 33(2) as being anticipated by Pakulski (US 6,331,508).

Pakulski teaches a method for controlling the formation of gas hydrate crystals in fluid systems by admixing said fluid with a polyoxyalkylenediamine (see abstract; col. 2, lines 1-28; col. 3, lines 5-15; col. 4, lines 32-64).

Accordingly, Pakulski teaching all the limitations of the claims anticipates the claims.

Claims 4-9, 13-20, 22-23, 25-26 and 28 the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the method of controlling the formation of crystalline hydrates in a fluid system.

Claims 1-32 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.